REMARKS

Applicants have carefully considered the rejections raised in the Action dated July 6, 2006.

Amendments to the Specification

The point the Examiner raises on about the amendment "beginning at line 19 of page 1" at the bottom of page 2 of the Report is correct. It should have read "beginning at line 19 of page 9". This amendment is being resubmitted to correct this error. Applicants apologize for this inadvertent error. The amendment to claim 1 to insert "corona discharge" is fully supported in the application as filed in several places, see line 9 in the Field of the Invention on page 1, page 12, line 3, page 19, line 7, page 19, line 21 and the first line of the Abstract. Therefore no new matter has been added.

The Examiner also determined that the term "surface," which was added to the specification to create an antecedent basis for the recited claim term "ground surface electrode," is new matter. However, the term "surface" is not new matter because it was inherent in the original disclosure. Further, the term "surface" was added to more clearly describe the present invention. Since the term "surface" is not new matter, for the reasons set forth below, withdrawal of the requirement to cancel the term "surface" in the specification is respectfully requested.

The term "surface," which was added to the specification to create an antecedent basis for the claim term "ground surface electrode" is not new matter because it was inherent in the original disclosure. On page 12, lines 6-7 of the specification, it is disclosed:

"In the present invention, a **ground electrode** with a large **surface** area is employed to make a ***pin-to-surface configuration***."

Applicants respectfully note that, the only possible interpretation of this phrase, and the only one those ordinarily skilled in the art would understand that this expression refers to, is a "**pin *electrode* to surface *ground electrode* configuration**, where clearly the ground electrode must be the "surface electrode".

Later on page 12, lines 12 of the specification, it is disclosed:

"for a **negative pin to grounded** flat **surface** configuration:

$$V_b = 100 + 8.6\,d \qquad (1)$$

where d (cm) is the distance between the **pin** and the flat **surface**. When a **negatively charged high voltage pin** is, for example, 5 cm away from the **ground electrode**, it needs 143 KV of voltage to break through air between the **pin and the ground electrode**. In other words, the voltage of the pin can go as high as 143 KV without occurrence of sparking. A **pin-to-pin** arrangement, however, allows a much smaller voltage difference between the charging pin and the grounded pin, so that the ionization efficiency of air is highly limited by the low voltage."

Further, on page 13, line 8 of the specification, it is disclosed:

"Therefore, for the ***pin-to-surface configuration***, as employed in this invention,"

Thus, when Applicants use the expression, "pin-to-pin" they must clearly be referring to a "pin electrode-to-pin electrode configuration", and when they refer to the present invention providing a "pin-to-surface configuration", those skilled in the art would understand this to mean a "pin electrode-to-surface electrode configuration." Further, the pin is "negatively charged", and the only other electrode with the higher surface area is referred to as the "ground electrode." Thus, it is inherent, and persons of ordinary skill in the art would have realized that the "ground electrode" is clearly the "ground surface electrode."

Accordingly, the term "surface" added to the specification is not new matter, but rather more clearly defines the present invention, and withdrawal of the requirement to cancel the term "surface" in the specification is respectfully requested.

35 U.S.C. 112, First Paragraph Rejection

The Examiner has rejected claims 1-12 under 35 U.S.C. 112, first paragraph on the basis that "the claim(s) contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically the Examiner has asserted that "[t]he claim term 'ground surface electrode,' as recited in claims 1, 5, 7-9, 11, and 12, is not supported in the originally filed disclosure." The Examiner has also stated in the Response to Arguments on page 5, last two lines:

"The comments merely show that the specification supports the ground electrode as having a "large surface area", however this does not adequately support the newly added claim term "ground surface electrode" which was not present in the originally filed disclosure."

Applicants disagree and assert there is no basis for this objection for the following reasons.

First, the addition of the term "surface" to the specification to provide an antecedent basis for the claim term "ground surface electrode" is not new matter for the reasons set forth above. Since there is an antecedent basis for the claim term "ground surface electrode" in the specification, withdrawal of this rejection is respectfully submitted.

Second, a claim limitation does not have to be *expressly* recited in the specification to satisfy the written description requirement. As set forth in § 2163 of the Manual of Patent Examination and Procedure (MPEP):

"To comply with the written description requirement of 35 U.S.C. 112, para. 1, ... each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure."

The MPEP further states that:

"The subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement."

Setting aside the amendments to the specification, the term "ground surface electrode" is inherent from the original disclosure, as discussed above. Thus, since one of ordinary skill in the art would have clearly understood that "ground electrode" must be the same as "ground surface electrode," withdrawal of this rejection is respectfully requested.

Notwithstanding this, Applicants assert that those skilled in the art upon a reading of the present application would clearly grasp that the present invention is providing a "pin electrode-to-surface ground electrode" configuration.

Applicants have made an honest and extensive effort to explain and accurately recite their invention starting with the interview with the Examiner well over a year ago and they are of the view they have not added any new matter in their efforts to clearly and succinctly recite their invention.

Patentability of the Claims Over the Cited References

Claims 1-4 have been rejected under 35 U.S.C. § 102(b) as being anticipated by the reference United States Patent No. 4,747,546 issued to Talacko. Reconsideration of the grounds for rejection under 35 U.S.C. § 102(b) is respectfully solicited for the following reasons.

The Examiner has taken the position that Talacko discloses in the embodiments shown in Figures 2 and 3 an electrode configuration which anticipates that recited in Applicant's claim 1, namely, to quote the Examiner, "the ground surface electrode having a second conducting surface that is clearly shown to be larger than the first surface area of the high voltage pin electrode to give a pin-to-surface electrode configuration (see again Figures 2 and 3)", found on page 4, lines 10 to 13 of the Examiner's Report.

There is no teaching whatsoever in Talacko to support this assertion by the Examiner that there is any electric field established between the high voltage electrodes 81 (Figure 2) or 92 (Figure 3) and ground electrode 6 which is common to all embodiments shown in Figures 1, 2, 3 and 4.

The main purpose of the Talacko patent is to provide a powder discharge apparatus which may be interchanged between a tribo charging gun (the embodiment of Figure 1) and a corona discharge gun with 3 different "inserts"

(giving the embodiments in Figures 2, 3 and 4). Upon review of Talacko, the role of ground electrode 6 is clearly only to discharge electric charges which collect on the channel wall 44 which impede friction based electrical charging (tribo charging gun) of the powder.

In fact, Talacko teaches that the discharge electrode 6 is not necessary for the corona charging gun embodiments of Figures 2 and 3. For those skilled in the art, it is well known that a discharge electrode 6, which acts to discharge the electric charges collected on a "rubbing" surface, will increase the efficiency of tribo charging by friction. This was known before the Talacko patent and in fact Talacko cites, in column 1, lines 24-31, a prior-art patent (Federal Republic of Germany Patent 2347491) on how to use such a discharge electrode to help tribo charging. Specifically, Talacko points out:

> "A spray apparatus of the above type is known from Federal Republic of Germany Pat. No. 23 47 491. The wall of the delivery channel is constructed of electrically insulating material against which particles of powder rub to thereby become electrically charged. In the process, however, ***electric charges collect on the channel wall and these charges impede the process of electrically charging the powder particles. To solve the problem, a discharge electrode extends within the delivery channel into the powder/gas stream and serves to remove the accumulated charge from the channel wall via the discharge electrode to a ground potential.***"

There are several instances in Talacko which further support this. The Examiner's attention is directed to column 4, lines 6 to 8 where Talacko clearly

discloses for the corona discharge gun embodiments (which applies to both the embodiments of Figures 2 and 3):

"**Electrodes 82 electrostatically charge powder which flows through the high electrical field that is created between electrodes 82.**"

Since both electrodes 82 are pin electrodes, therefore this is not a "pin-to-surface ground electrode" configuration as recited in present claim 1. The same argument applies to Figure 3, the difference between Figures 2 and 3 is that in the embodiment of Figure 3 the electrodes 92 are located downstream of their position in Figure 2 so that charging of the powder occurs in the region 93 near the outlet to give "external charging" versus "internal charging" in the embodiment of Figure 2.

Thus, the purpose for which ground electrode 6 is used in all the embodiments is not used for charging the powder at all. For example, the embodiment shown in Figure 1 contains no other electrodes other than ground electrode 6 and it is clearly for mitigating charge buildup, not for charging the powder. The Examiner's attention is directed to column 3, lines 36 to 49 which disclose:

"**Flow guide member 52 is constructed of an electrically insulating material which electrically charges by friction particles of powder which rub therealong.**"

Later in column 3, lines 52 to 57 Talacko discloses:

"**The powder particles in channel 26 are electrostatically charged by friction both by outer channel wall 44 and by inner channel wall 58.**"

And again in column 4, lines 42 to 47, Talacko discloses:

"In the **first embodiment**, shown in FIG. 1**, electrostatic charging of the powder is *entirely by friction***. In the second to fourth embodiments shown respectively in FIGS. 2, 3 AND 4, electrostatic charging is also obtained by means of electrodes 82, 91, 101."

Further, in column 5, lines 3 to 8, Talacko discloses:

"For attachment tools 70, 90, and 100 of FIGS. 2, 3 and 4, good results are obtained even if the powder is charged solely electrically by electrodes 82, 92, 101 even without frictional charging. **Where friction based charging is not used discharge electrode 6 may be omitted**."

In other words, ground electrode 6 plays no role in charging the powder particles in the corona discharge embodiments in Figures 2 and 3 and there is no field developed between the pin electrodes and the ground electrode, but rather this further shows that Talacko included the "discharge electrode 6" for the purpose of the tribo gun embodiment of Figure 1, while the apparatus of present claim 1 is clearly a corono gun. Talacko clearly states their design is to produce the discharge field in a localized region near the exit of the guns of Figures 2 and 3.

Again, there is no disclosure at all of any relationship between the pin electrodes of Talacko and the ground electrode at the back of the spray gun. Thus, reading into Talacko that there is cooperation between the electrodes 82, 83 and electrode 6, as the Examiner has asserted, would be expressly reading

into the reference something that would contradict the purpose of the configurations in Talacko.

In conclusion, the term "surface ground electrode" is fully supported by the disclosure, and the "pin electrode to surface electrode" configuration of present claim 1 is not disclosed in Talacko.

In view of these quite distinct differences, Applicants respectfully submit the subject matter of claims 1 to 4 is not disclosed in Talacko. In view of the foregoing, reconsideration and withdrawal of the rejections of claims 1 to 12 is respectfully solicited and favorable consideration and allowance of claims 1 to 12 is requested.

Should the Examiner have any questions regarding the allowability of the claims with respect to the art, it would be appreciated if the Examiner would contact the undersigned attorney-of-record at the telephone number shown below for further expediting the prosecution of the application.

Respectfully submitted,

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